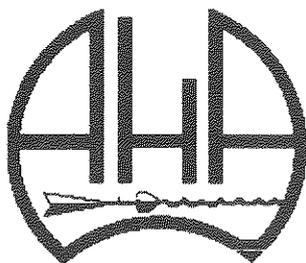


AUSTRALASIAN HYDROGRAPHERS ASSOCIATION



Australasian Hydrographer

February 2002
Volume 6, Number 2

In This Issue

Editorial	1
20 Questions with Mic Clayton	2
Waterwatch Australia	5
Magnetostrictive Level Sensors	7
Natural Heritage Trust	9
A Successful NHT Project	12
WMO Hydrology and Water Resources Programme	13
ADCP Issues	16
Salinity and Biodiversity	18
News From Across The Ditch	19

Quote:

"The River," corrected the Rat. "It's my world, and I don't want any other. What it hasn't got is not worth having, and what it doesn't know is not worth knowing. Lord! the times we've had together!"

Kenneth Grahame, *The Wind in the Willows*

The **Australasian Hydrographer** is the Journal of the **Australasian Hydrographers' Association**. The Journal is distributed monthly, free of charge to Members.

Please visit our web site at:

<http://www.austhydro.tascom.net>
to download a Membership Application and to find Contact Details for your State Representative.

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Editorial

Hello there, and welcome to our latest Newsletter.

There seems to be a recurrent theme to these publications...as I begin to put this together, I have absolutely no idea what the final product will contain, and whether I have enough material to fill it up usefully!

My plea for a 20 questions volunteer fell on Mic Clayton's ears. Thanks Mic for your response. Unfortunately, I understand the leech problems. There's no getting away from them at home, either. One of us, and that includes the dog, seems to drop one inside our house on a pretty regular basis.

However, that is all about to change. As I mentioned in the last Newsletter, I'm off to South Australia, again, in early March. I still don't know what I'll do there yet, apart from keeping my wife happy that is. I believe something might be in the pipeline though. It has to be an advantage that I haven't seen a leech there..yet

I'm still desperate for suitable black and white photographs for our front cover. While on the subject of desperation, a few articles wouldn't go astray either! I guarantee that you will get sick of looking at my mug and hearing my tales of woe. As I said previously, The Barber's wife is starting to get suspicious, and he had to go to ground this month. I'll twist his arm severely, and have him back in the next issue though.

In keeping with what Mic says in his article, it's interesting to note that there seem to be Hydrographer jobs springing up on a regular basis now. It seems that the legislators have had a fair change in attitudes in recent years. A pity they stuffed it up so badly in the early to mid - 1990's. Don't forget, if your organization has any jobs going, let me know and I'll put it on our web site. For free, too! If you have any links or other suggestions for the site, please let me know. Les Marshall

20 Questions with Mic Clayton

Mic joined the Sydney Water Board in 1980 as a trainee technician and began his career in Hydrography in 1981 with the Board's Gauging Branch where he completed his Hydrography Certificate in 1983. In 1995 he took up the position of Senior Hydrographer at the Department of Land and Water Conservation in Tumut. In 1997 he continued the movements South to a little island near the South Pole, known as Tasmania, where he is currently the Senior Water Information Officer with the Department of Primary Industries, Water and Environment.

Between 1995 and 2000 Mic undertook distance education studies through Deakin University and achieved a Bachelor of Technology (Environmental) as well as the Alfred Deakin Medal for Outstanding Academic Performance at the end of the course.

Mic is married to Ann and at present has two boys Jack (5) and Darcy (3) with a third one (don't know which type yet) about to be squeezed out as this quarterly edition goes out.

What was your first job?

If you ignore working part time at Bullen's Animal World west of Sydney running putt-putt boats around a muddy lake it was with the Sydney Water Board as a trainee Mechanical Technician (1980).

Why did you pick it?

Saw some people in a boat on a flooded Nepean River at Wallacia in the late 1970's and also saw they drove a four wheel drive and thought "hmm that looks exciting". Forgot about it until the day after my last HSC exam in 1979 when I realised "geeze I need a job now!" Tried for a trainee Gauging Technician but was offered the mechanical position instead. I scored a transfer to the Water Boards Gauging Branch (1981) as a trainee Gauging Technician after 12 months of counting how many vehicles the Water Board owned (particularly the number of 4 wheel drives the Gauging Branch had!) while in the Mechanical Branch.

What drew you to your present position?

The opportunity to live and work in Tassie. Had to get away from the rat race in Tumut!

What is the favourite part of your current job?

Having a good mix of field and office work and the 'cradle to grave' requirements of the job. Being a small group everyone has to be able to do everything related to the job - there's no compartmentalisation of duties, each person is expected to do everything from putting together our own systems, instrument calibrations, installations, running the network, outputting data and results, running the budget, providing

technical advice to other groups and Departments and so on. Too much work to do has its upside it is easier to pick the nicer work to do!

What is the strangest thing you have been asked to do for/at work?

Work with Paul Leathers and Bill Rodgers at the Water Board.

Pastimes and hobbies?

Regular cycling continues to be my main escape - have just recently acquired a trailer bike which converts a single bike into an articulated tandem so my eldest can come riding with me as well. Ducking over to Bruny Island (just off the big island of Tassie) for a weekend with the family. Sea kayaking is now becoming a favourite. As the kids get older the bushwalking will pick up again.

Keeping the "Claypatch" in order, bottling fruit from the orchard and the occasional chook killing also occupies some time as well.

What are you reading?

At present am working through the latest Terry Brooks series "The Voyage of The Jerle Shannara" The Dr Suess series is also recommended as compulsory reading each evening at bedtime by the offspring.

Favourite Music?

Beatles (particularly the demo tape stuff and stuff that didn't appear on the main albums) and McCartney (Wings). More recent stuff I am into is the Gurubusters, a local Tasmanian outfit, who have done a sitar version of Jimmi Hendrix's 'Are You Experienced' - probably a group that the new

listener may need some mind altering substances to help them get into this style of music.

Favourite Website?

The Met Bureau web site - just to see if they get their forecasts right!

Where do you see our industry in say 5 years from now?

As the pressure on water resources increases the managers of the resource will realise that their rationalisations of the 80's and 90's have left them with a lack of data (historical and present) to effectively manage the resource. They can move a couple of ways - manufacture models and data out of thin air (desktop analysis) or they can get the real data they need and upgrade the networks and infrastructure of hydrometric networks and maintain baseline monitoring sites to the same level as they require of so called management monitoring sites. The technology we have available now is vast and easy to use - I can see us continuing to do more with less because of the technology but the industry must continue to reinforce that you still need a physical presence in the field - the latest technology still needs to be ground truthed, calibrated and so on by people like us.

How can participation of younger members be encouraged in our Association?

Firstly you need to have jobs for the younger ones in the field. Many organisations went through some sort of downsizing in the last couple of decades during the so-called economic rationalism years. Now organisations are looking to put new people on but they want experienced people to hit the ground running - there is little interest from many organisations or authorities in putting trainees on or providing a structured career path through the organisation. If you don't have younger workers in the field it is harder to encourage them to be in the Association!

If you could achieve one thing in your lifetime what would it be?

Finally get my Greenspeed recumbent tricycle with S&S couplings and to one day cycle Ireland.

Name three people you would like to invite to dinner?

Spike Milligan, Peter Sellers and Harry Secombe

(the Goons) Unfortunately two are no longer with us. John, Paul, George and Ringo (nope, two missing there as well). Oh well, Scott Walker can double up as a comic and pretty reasonable lead singer when appropriately primed.

Your favourite beverage?

Boags Strong Arm Bitter - not that yuppy Boags Premium! Has a stronger malt character than a lot of other bitters.

Your ideal weekend consists of...

Head down to the beach with kids and missus and the kayaks and see the dolphin pods that regularly move through the D'Entrecasteaux Channel, a BBQ with Wursthau Beef and Cheese Kranskies, take the kids for a quick trip on the Bruny Island Ferry, driving around in circles on the ride on mower, thinking about fixing those paddock fence posts that have been falling over ever since we bought the house, creating a roast chook out of one of the feathered birds running around the pen, reading "Green Eggs and Ham" (again) to the kids at bedtime!

How do you balance your work and private life?

Minimise TV, don't have a mobile phone, leave the work mobile at work, make sure I berate co-workers if they ring me at home on my days off. Take flextime and time off in lieu as a block so that I can have longer uninterrupted time outside of work. Those Monday to Friday stints tend to interrupt the weekends too much.

Your greatest asset?

Speaking my mind.

Your greatest liability?

Speaking my mind.

What is the best thing about your job?

The autonomous nature of the position and the chopper trips into the South West Wilderness area.

What is the worst thing about your job?

The draughty cablecars when you need to do twosies during a flood gauging or the leech has been living inside your waders for the last two hours and you thought it was a grass seed that was irritating you.

ACCESS THE BUREAU WEB SITE AT: www.bom.gov.au

A wide range of climate related data, information and products are available. Of particular interest to people in the water industry are:

- Real time rainfall and river height data
- Climate averages in map and graph form
- National catalogue of river stations www.bom.gov.au/hydro/wr/sgc
- Drainage divisions and river basin boundaries
- National catalogue of rainfall stations www.bom.gov.au/hydro/wr/rgc
- National evapo-transpiration maps

The Bureau of Meteorology's Hydrology Program would like to thank the hydrographic and data management groups in all State and Territory water agencies for their support over the years. Data and information have been provided for many projects, including:

- Global Runoff Data Centre sponsored by WMO
- UNESCO Asian Pacific Friend Project
- Stream Gauging Information, Australia
- Flood warning system development and operation
- Rainman Streamflow Project
- Specialised rainfall analyses

WARNING

11TH Australasian Hydrographic Conference

Date Change

Unfortunately the Conference Venue inadvertently double booked the accommodation component of our original booking.

Therefore the conference will now be held from **3rd to 5th of July 2002** at the Novotel Hotel & Hotel Ibis Sydney Olympic Park. A field day has also been organized for Saturday 6th July 2002 for interested parties.

The Convenors apologise for any inconvenience arising from this problem.

A registration form is included with this Newsletter. Further information about the Conference can be obtained from our web site www.austhydro.net.au

Waterwatch Australia

This article is sourced from Waterwatch Australia's web site www.waterwatch.org.au I have been a Waterwatch volunteer for around 18 months, and it certainly isn't very taxing. So, if you're sick of being paid to work, perhaps you could lend your expertise for a couple of hours a month. Ed.

In 1992 concerns regarding declining water quality were growing in Australia as visible signs such as rising salinity and blue-green algal blooms in our waterways were becoming more prevalent.

In recognition of this growing concern for water quality the Commonwealth Government initiated Waterwatch in 1993.

Waterwatch Australia is a national community water monitoring program that encourages all Australians to become involved and active in the protection and management of their waterways and catchments.

Since Waterwatch began, the number of monitoring groups has grown from 200

operating in 16 catchments, to nearly 3000 groups in 200 Catchments. Regular monitoring occurs at approximately 5,000 sites nationally.

The Waterwatch network is made up of individuals, community groups and school groups who undertake a variety of biological & habitat assessments and physical & chemical tests to build up a picture of the health of their waterways and catchments.

By monitoring their local waterways over time community members can determine if the health of the waterway and surrounds are improving, declining or being maintained.

Waterwatch groups have initiated many positive solutions to improve the quality of

their waterways by fencing areas of riverbanks, eradicating weeds and invasive species and reducing the use of pesticides and other pollutants.

The Waterwatch network strives to achieve a shared responsibility and collective action for natural resource management through partnerships between community, government and industry. Funding for Waterwatch is provided by the Federal Government's Natural Heritage Trust (see the

separate article) and is administered by a team based in the Sustainable Water Section of Environment Australia.

Waterwatch is an 'umbrella' scheme, that assists in the overall co-ordination of the Waterwatch Program in every State and Territory. There are Waterwatch Facilitators for each State and Territory and they assist a number of regional co-ordinators with the running of a variety of local monitoring programs.

HYDROGRAPHER / FIELD HYDROLOGIST

ECOWISE Environmental Ltd performs environmental monitoring and water resources management for a variety of clients in the public, private and mining sectors. We are seeking applications from suitably qualified and experienced persons to assist with our Australian operations.



Responsibilities

- Install and operate environmental, water resource, and groundwater monitoring systems. These systems typically comprise data loggers, various sensors and telemetry.
- Data management and reporting of information.

Qualifications & Experience

- Formal qualifications in a related environmental field (desirable) [Hydrography, Hydrology, Water Science, or Instrumentation]
- Minimum 3 years relevant fieldwork experience (essential)
- Instrumentation or radio telemetry expertise (highly desirable)
- Proven ability to liaise with clients, meet deadlines and produce reports
- Proven ability with HYDSYS, Excel, Word

Remuneration

- Salary package commensurate with skills and experience.

Applications to : P.O. Box 1834 Fyshwick, ACT, 2609
or via E-mail to address below

**For selection criteria contact reception
02 6270 7650**

E-mail amclean@ecowise.com.au

Magnetostrictive Level Sensors from MTS Sensors

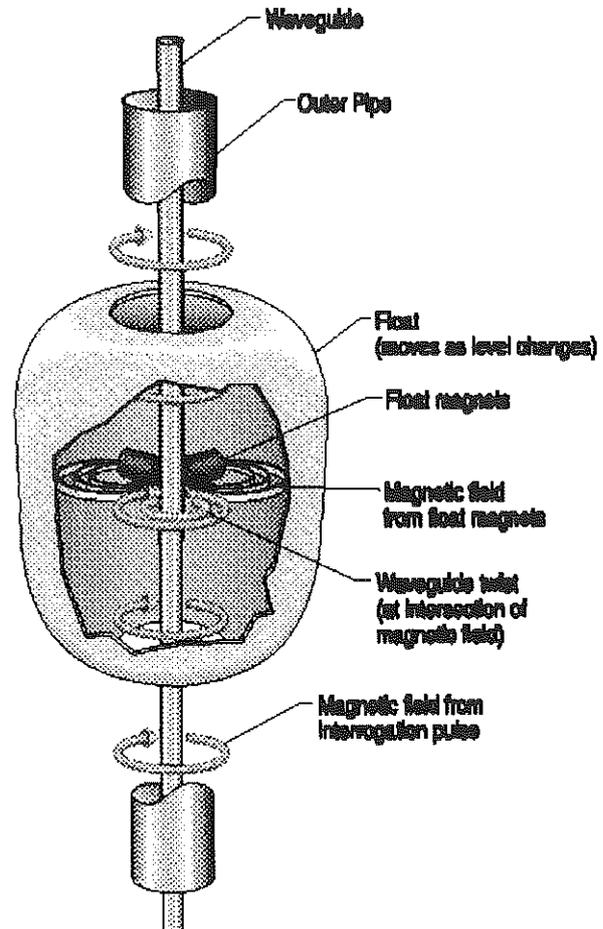
This article was put together by Kevin Davidson from Davidson Measurement Pty Ltd, one of our Corporate Members.

Principle of Magnetostriction

The level transmitter is composed of three concentric members. The outermost member is a protective, product-compatible outer pipe that withstands aggressive or harsh process industry applications.

The heart of the transmitter design is the innermost member - the waveguide - a formed element constructed of a proprietary magnetostrictive material. A low current interrogation pulse is generated in the transmitter electronics and transmitted down the waveguide creating an electromagnetic field along the length of the waveguide.

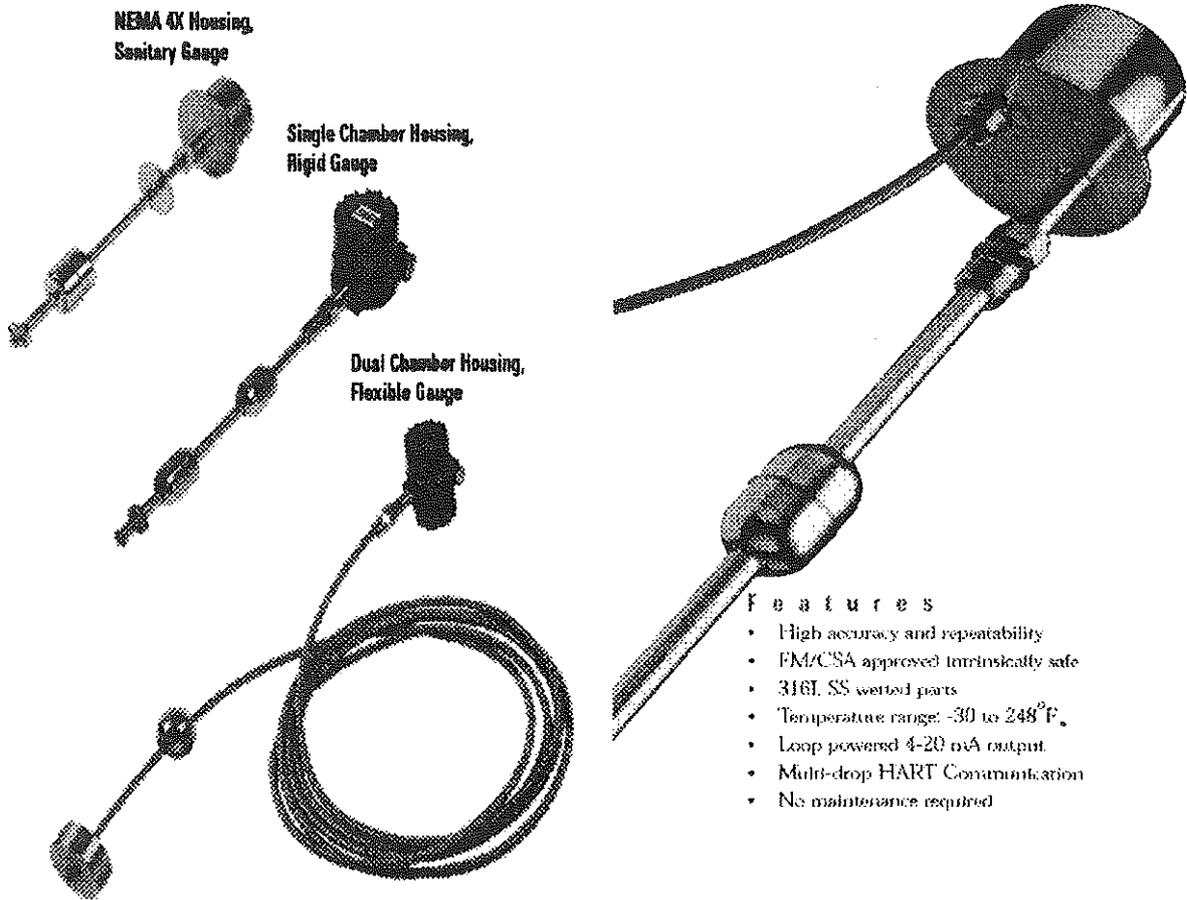
When this magnetic field interacts with the permanent magnetic field of a magnet mounted inside the float, a torsional strain pulse, or waveguide twist, results. This waveguide twist is detected as a return pulse. The time period between the initiation of the interrogation pulse and the detection of the return pulse is used to determine the level measurement with a high degree of accuracy and reliability.



Technologically advanced Level Plus liquid level gauges are known for their accurate and consistent measurements of product, interface levels and temperatures in virtually any application. The MTS Level Plus are ideal sensors for accurate measurement of water level whether in a weir, stream or tank. Their performance includes specifications of non linearity to 0.02% independent best straight line or 0.794mm and a repeatability to 0.005% FS or 0.127mm whichever is greater. There is also a full range of floats that can be adapted to different applications and materials such as teflon coated for those more sticky situations.

The Level Plus product line features analog models with 4-20 mA output and direct digital access (DDA) units with EIA 485 output. There's even a gauge for large tanks that can measure up to 18m. MTS also offers an array of components and accessories to complete any control system. The design of the MTS Level Plus products allows you the flexibility to take advantage of your existing hardware and wiring. Whether you require local indication or interface capabilities with your existing PLC, DCS, or PID controllers and recorders, we have a product to meet your application demands.

Davidson Measurement already has a number of installed sensors covering a number of different applications, their applications engineers would be happy to answer any of your questions. Davidson's can be contacted on (03) 9580 4366, via email info@davidson.com.au or through their web site www.davidson.com.au which has extensive information on the MTS Level Plus sensors.

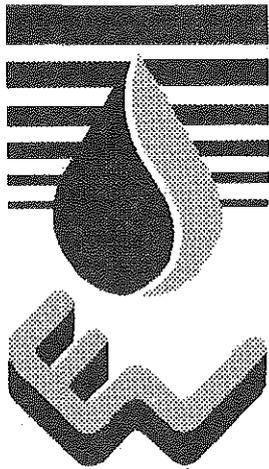


- Features**
- High accuracy and repeatability
 - FM/CSA approved intrinsically safe
 - 316L SS wetted parts
 - Temperature range: -30 to 248°F_s
 - Loop powered 4-20 mA output
 - Multi-drop HART Communication
 - No maintenance required

Another Quote:

*Peace I ask of thee, o River
Peace, peace, peace
When I learn to live serenely
Cares will cease.
From the hills I gather courage
Visions of the days to be
Strength to lead and faith to follow
All are given unto me
Peace I ask of thee, o River
Peace, peace, peace.*

Camp song (author unknown)



ECOWISE Environmental total catchment management

Scientific - Laboratory Services
Engineering Hydrology
Field Hydrology

installation
operation
maintenance

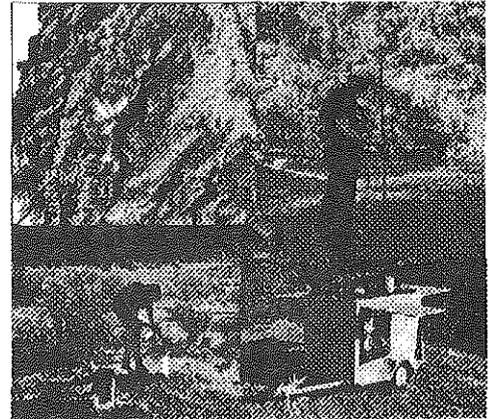
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WA: Perth, Newman.



The Natural Heritage Trust

Many of our Members are probably working on projects funded under the Natural Heritage Trust. What's more, they may not even know it! This article gives an overview of this initiative. I tried to edit out the political spiel. The full text is at www.nht.gov.au

Caring for our environment is one of the great challenges facing Australians as we enter the 21st Century.

To guarantee that new generations will be able to enjoy and benefit from our rich and unique natural heritage, we must take steps to preserve it and restore the balance where problems exist. The future prosperity of our nation depends on it. We must reverse the harm already done, protect against further damage and manage our environment in a way which is permanently sustainable so that

it can continue to support our communities and our agricultural industries.

Now, for the first time in our history, Australians have the opportunity to be part of a nationwide approach to improving our environment: the Natural Heritage Trust.

The Natural Heritage Trust will fund projects which directly address pressing environmental issues whether they be at a local, regional, State or national level.

The Natural Heritage Trust represents the biggest financial commitment to environmental action by any federal government in Australia's history - \$2.5 billion. Because the money is protected in a Trust it ensures funding will not be diverted away from activities which will be of lasting benefit to the Australian environment. So we can plan ahead with confidence and without any fear that projects will not go ahead due to lack of funding.

Action

The Natural Heritage Trust represents a new era in environmental responsibility. The Federal Government has committed funds to go to sensible projects which really make a difference on the ground.

The Natural Heritage Trust enables every Australian to be involved and it brings together the efforts of individuals, communities and governments, targeting our environmental problems at their source.

A Natural Partnership

The Natural Heritage Trust is a partnership of Australians. It combines the knowledge and resources of scientists, farmers, Aboriginal people, community and environmental groups, governments and our agricultural industries, working with each other to manage our natural heritage responsibly. Trust projects will reduce environmental threats and ensure our rural industries prosper.

Australia has tremendous opportunities to lead the world as a clean, green nation with unsurpassed environmental protection and ecologically sustainable rural enterprises. This will produce major economic benefits and job opportunities as well as increased exports to overseas consumers concerned about environmental practices and pollution levels in other food-producing nations.

Ultimately, our long-term economic prospects are linked to environmental sustainability and the capacity to maintain fertile farmlands and pastures.

Shared Goals

The Federal Government has recognised that the interests of our natural heritage and our agricultural sector are not mutually exclusive, but share a common goal - ecological sustainability - which is the basis of our economic and environmental future, providing more jobs, a better place for us all to live and a healthier place for our families to grow.

The Natural Heritage Trust will play a major role in developing sustainable agriculture and protecting our unique biodiversity - the different plants, animals and micro-organisms, and the ecosystems of which they are a part - through improved management and delivery of resources.

The Trust will coordinate an integrated, long-term approach to the conservation and sustainability of Australia's land, vegetation, water, biodiversity and our coasts and oceans. The Trust will help farmers and pastoralists develop systems of managing the Australian landscape which suit its unique ecological needs, and it will unite our best science and technology with the skills and innovation of our landholders and the enthusiasm of our communities.

Details of the Natural Heritage Trust, and how Australians can take part in the programs, can be accessed through the website www.nht.gov.au

On page 12, we have an article describing one project.



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Sydney, Australia

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Hydrological Services New Shaft Encoder "AD375-AN-LCD"

- Shaft Encoder with 4-20 mA output.
- Optional (2 lines x 8 Characters) LCD display showing range, resolution, time, date and current water level.
- Parameters are user selectable via push buttons on the shaft encoder housing.
- Unit can function for extended periods even with the loss of the current-loop driving voltage. Unit has lithium or alkaline batteries.

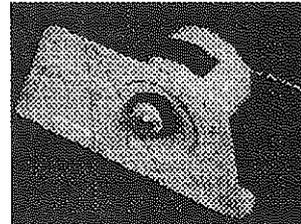


Figure 1 AD375-AN-LCD

**Submersible Pressure Transducer
Model WL1000W**

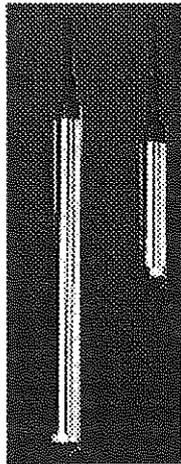


Figure 2 WL1000W

- Water Level Monitoring and Recording
- High Accuracy $\pm 0.05\%$ F.S.
- Pre-Calibrated Sensor
- Temperature Compensated
- Thermally Preconditioned
- Output Signals :
 - 4 TO 20 mA, 2 Wire system
 - 0 TO 5V
 - 0 TO 250 mV Differential
- Standard Model,
 - Mass-400g
 - Dimensions:
 - Diameter-21 mm, Length-200 mm
- Borehole Model,
 - Mass-700g
 - Dimensions:
 - Diameter-21 mm, Length-380 mm

**Dry Pressure Transducer
Model WL1000D**

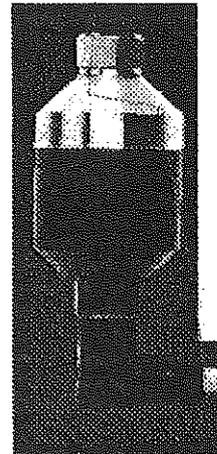


Figure 3 WL1000D

- Water Level Monitoring with Gas Purge System
- High Accuracy $\pm 0.05\%$ F.S.
- Zero & Span Adjustment
- Pre-Calibrated Sensor
- Temperature Compensated
- Thermally Preconditioned
- Output Signals :
 - 4 TO 20 mA, 2 Wire system
 - 0 TO 5V
 - 0 TO 250 mV Differential
- Dimensions:
 - Diameter-41 mm
 - Length-131 mm
 - Mass-300g

Hydrological Services Offers Three Years Warranty For All Products

A Successful Natural Heritage Trust Project

Five years ago, a 'one in a hundred year' flood saw a four metre flood wave tear the Orara River apart and dump rubbish and heavy timber all along its length.

The Orara, the source of the water supply for Coffs Harbour's 60,000 residents, has been deteriorating for decades through excessive gravel extraction, with banks collapsing, gravel islands developing and She Oak, Camphor Laurel and other exotic weed infestations.

A major concern has been a drop of over one and a half metres in the water table in a number of areas.

Since 1996, through the Natural Heritage Trust's National Rivercare Program, about 200 landholders, members of six landcare groups, have been working to arrest the decline in the river's health.

"It's a landcare project that has gone beyond landcare, but the key to the whole thing is that it's still run by the community," Orara Valley Rivercare Management Committee Chair Rod McKelvey said.

"To date, the Natural Heritage Trust has put in \$268,000, and we're fortunate that we're in a local government area where we can also access funds from the City Council's environmental levy. It really does show how you can get things done when you get a partnership going of Federal, State and Local Government and the community," he said.

The Orara River Restoration project aims to restore and maintain a healthy fresh water river and riparian habitat, in particular above Cochranes Pool, the extraction point for Coffs Harbour's fresh water supply. This is being achieved by individual property owners encouraging the return of the natural riparian habitat, and restoring the water table.

"We have finished work on 12 priority sites along the river and are now working on more sites, filling in the gaps in between," Rod said.

"The result has been a measurable improvement in water quality and a return of native animals and fish life."

Federal Minister for Agriculture, Fisheries and Forestry, Warren Truss, visited the Orara River in September to announce successful NSW applicants for funding from the Natural Heritage Trust in 2001-2002.

"People involved in the Orara Valley Rivercare project have put together a plan that is notable for its user-friendliness and its strategic approach, which provides a framework for managing both the riverbanks and beds and the surrounding vegetation and exotic weed problems," Mr Truss said.

"This project is evidence that, as a result of a good standard of local strategy development and implementation, both communities and Government are now moving towards a more regional approach to natural resource management – that is, a focus on local solutions for local problems."

WMO Hydrology and Water Resources Programme

Purpose and scope

The Hydrology and Water Resources Programme (HWRP) fulfils one of the major purposes of WMO, namely "to promote activities in operational hydrology and to further close cooperation between Meteorological and Hydrological Services" (paragraph (e) of Article 2 of the Organization's Convention). There are also a number of important inter-agency activities which call on the resources of the Programme.

The activities under the HWRP concentrate on the measurement of basic hydrological elements from networks of hydrological and meteorological stations; the collection, processing, storage, retrieval and publication of hydrological data, including data on the quantity and quality of both surface water and groundwater; the provision of such data and related information for use in planning and operating water resources projects; and the installation and operation of hydrological forecasting systems.

The HWRP also promotes improvements in the capabilities in developing countries, through technology transfer and technical cooperation, so as to enable them, on their own, to assess their water resources on a continuous basis, to respond to threats of floods and droughts and thus to meet the requirements for water and its use and management for a range of purposes. The Programme takes into consideration the existence of global change and its hydrological impacts and the need to provide more information to the general public and to Governments so that they can better understand the importance of hydrology and the role of national Hydrological Services (NHSs) in their activities. The Programme also promotes increased collaboration between NHSs and NMSs, particularly in the provision of timely and accurate hydrological forecasts.

Overall objective

The overall objective of the Hydrology and Water Resources Programme is:

To apply hydrology to meet the needs for sustainable development and use of water and related resources; to the mitigation of water-related disasters; and to effective environmental management at national and international levels.

Programme structure

The Programme is implemented through five mutually supporting components:

- Programme on Basic Systems in Hydrology (including HOMS and WHYCOS)
- Programme on Forecasting and Applications in Hydrology
- Programme on Sustainable Development of Water Resources
- Programme on Capacity Building in Hydrology and Water Resources
- Programme on Water-related Issues

The HWRP is planned and executed under the auspices of the WMO Commission for Hydrology (CHy) which meets every four years to review past activities and decide on the future programmes.

The HWRP incorporates and supports a wide range of activities related to education and training in operational hydrology. In addition, a substantial proportion of WMO's technical cooperation activities are undertaken in the field of operational hydrology. Regional aspects of projects covered by the HWRP are implemented principally by the six Regional Associations of WMO through their working groups on hydrology.

Hydrological elements are embedded in several other WMO Programmes. Particular examples are the hydrological components of the Tropical Cyclone Programme, the Education Training Programme and that of

the World Climate Programme (WCP) which is known as WCP-Water. There are strong links between hydrology and meteorology through the study of the hydrological cycle where WMO has a particular interest and responsibility in promoting the close co-ordination of the methods and activities of those involved in the two disciplines. In this context, the Global Energy and Water Cycle Experiment (GEWEX) is noteworthy. The International Association of Hydrological

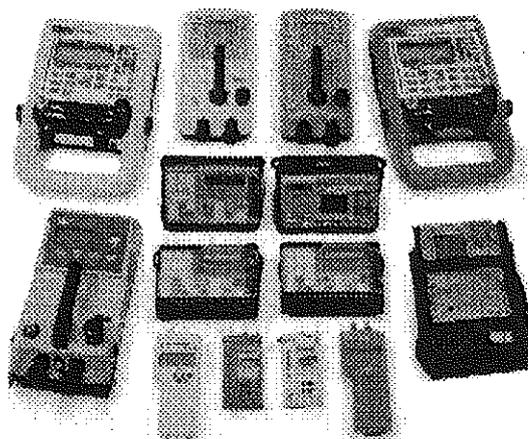
Sciences (IAHS) jointly convened with WMO a working group on GEWEX. It was this Working Group that proposed the study of a large river basin which subsequently focussed on the Mississippi Basin in the form of the GEWEX Continental-scale International Project (GCIP). Now hydrologists and meteorologists have embarked on a comprehensive study of the basin's water balance as part of the World Climate Research Programme (WCRP).



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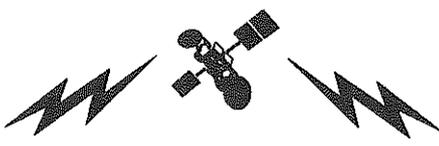
Calibrators and calibration

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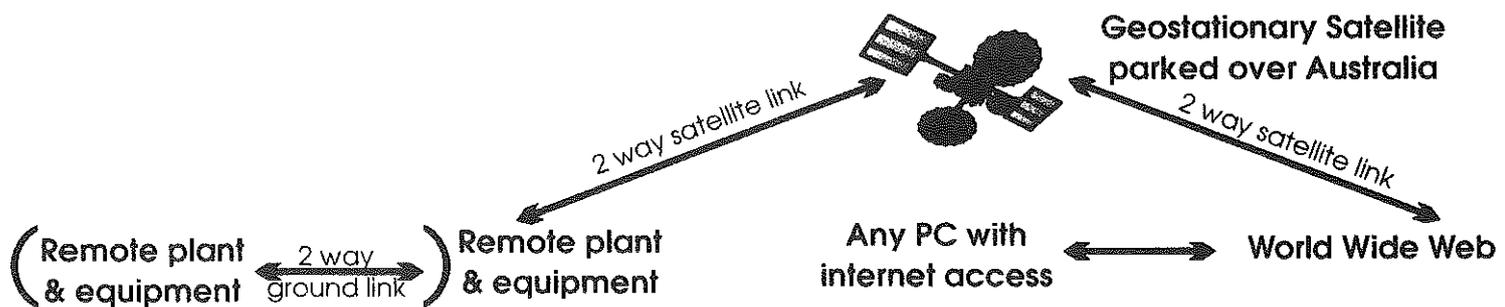
Satelemetry

Satelemetry is affordable satellite telemetry with starting prices from \$9,000 & \$60/month operating costs.

The Satelemetry terminal is tiny, about half the size of a VHS video cassette, and has an inbuilt GPS receiver. The terminal is fully sealed including the internal antennas.

Satelemetry is a low data rate, low cost scada (supervisory control & data acquisition) system for tracking, monitoring & controlling remote plant & equipment.

In fixed plant applications the Satelemetry system can be interfaced to short haul terrestrial radio. These ground links can expand the reach of a single satellite terminal to anything within a 5 km radius.



Suitable applications for satelemetry are;

- River, pipeline & bore pump monitoring. Combined with 2 proximal, radio licence ground links, satellite terminals at 10 km intervals provide a cost effective wireless alternative to cabling
- Vehicle tracking, control & monitoring. Satelemetry is third generation mass produced technology that costs a fraction of traditional satellite based systems. The Satelemetry terminal can monitor refrigerated truck temperatures, check aircraft cabin pressurisation or vital engine parameters & can even provide limited messaging from an internet PC.
- Satelemetry is ideal for isolated environmental monitoring where cell phone or trunked radio services are unavailable.

What can't Satelemetry do? The system is unsuitable to any high data rate application making it inappropriate for web camera situations or any long term, real time demanding scada task (access plans vary from 40 to 720 messages per month)

ADCP Issues

I had an e-mail recently from Rod Kerr of NSW Department of Land & Water Conservation regarding RDI Firmware updates..among other things! I know he won't mind me re-producing what he sent me...with some editorial discretion obviously.

First, If you are not already aware of it, the attached email from USGS (*Sorry, I haven't included this, as I think users will have all the web site details etc. Ed.*) indicates that RDI has upgraded its Rio Grande ADCP firmware from vs 10.13 to vs 10.14 to overcome potential bugs using Modes 5 and 11 which result in lost data.

Upgrades can easily be done by logging onto RDI users website and having your ADCP handy (with cable and power) to plug into the computer, and directly download the upgrade to it.

Its 'horses for courses' whether you use Mode 5. (I have not got Mode 11 yet, ... but have heard of it, as well as a Mode 6). I use Mode 5 at some sites on the Murray River depending on conditions at the time, but still consider myself in early days as a user of this technology.

Second; ... Various people have agreed with me that it would be a useful thing to have an Australasian ADCP Users Group as a forum to provide feedback etc regarding all things pertaining to using ADCP's.

Many of us already have a network of 'connections' which we use to help us out when we have teething problems with this newer technology and quality assurance issues. I am aware that we all have great demands upon our time and to date the Users Group has not 'magically appeared', ... so I am offering to semi-formalise a larger network if anyone cares to be part of it.

As a starter I propose that I get together an e-mail address list and keep it updated and distributed to all on it, so that we have an extended network. Perhaps in time this might be included under the umbrella of the Australasian Hydrographers Association or something similarly formal, but for now it will be enough to know who else is out there and extend our ability to 'compare notes'.

Feel free to forward this e-mail to anyone you think might be interested as I know there are many that I do not have an address for. (*I will, when I get some time, send it to our e-mail list. Ed.*)

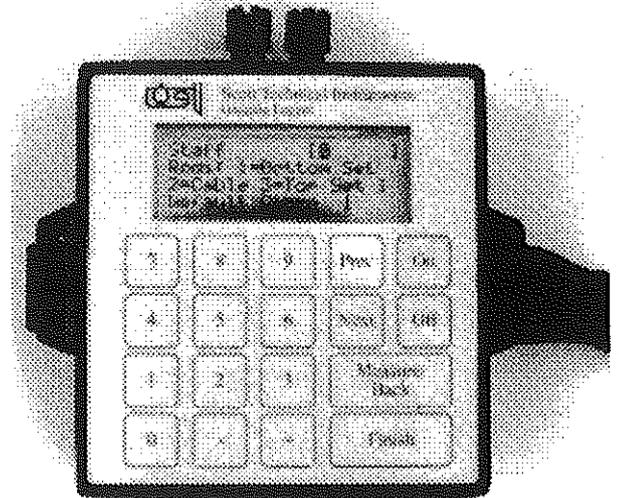
If you take the time to reply (with even a simple one liner "I got it re ADCPs"), then I will add your address to the list and hopefully distribute it in about a month ? (when its large enough to warrant doing so !).

Any other suggestions to get this off the ground are welcome.

Rod. Kerr
Senior Hydrographer - Murray Region
NSW Department of Land & Water Conservation
Hume Dam,
Mail Bag 2, Wodonga. Victoria 3691 Australia
Phone: 02 6026 4320
Fax: 02 6026 4424
Email: rkerr@dlwc.nsw.gov.au

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In addition to improving gauging accuracy and presentation quality, up to 20 minutes can be saved per gauging. Cost recovery in a busy hydrology department approximately 1 to 2 years.

Quote:

"The Taranaki Regional Council has recently purchased a second Gauging Logger (known affectionately as a Glogger) to add to its arsenal of gauging equipment. We have found, after the initial and almost inevitable teething problems with new products and software, the Glogger has made the 1-person gauging exercise very efficient and due to the enhancements of the latest software version arguably more accurate. The on-board software is plain and user-friendly and the end results can be easily transferred into most hydrological databases, eliminating the need for double handling. The Glogger being fully water-proof (we have recently done deep wade gaugings with the Glogger under about 400mm of water!) we have no hesitation in recommending it as another item for the Hydrologist's field tool box."
Grant Best, Hydrologist

For Full Technical Details See: www.scottech.net

For further information contact: info@scottech.net

Implications of Salinity for Biodiversity Conservation and Management

Deteriorating water quality and reduced agricultural productivity resulting from increasing salinity across the Australian landscape have now been a focus of concern for some time.

It has only been more recently that the impact of salt-affected land and water on biodiversity has received wider attention.

Recognising that little information had been assembled on this issue the Australian and New Zealand Environment and Conservation Council (ANZECC) established a Task Force to investigate the state of knowledge and provide a basis for incorporating biodiversity conservation aims into salinity management plans.

A report, *Implications of Salinity for Biodiversity Conservation and Management*, has now been published. It provides an overview of current knowledge, makes recommendations for on-ground actions and institutional change and identifies key research needs.

The report aims to raise awareness and demonstrate how, if appropriately designed, actions to mitigate salinity can at the same time contribute to biodiversity conservation outcomes.

If you wish to read this report, it is available in pdf format at:

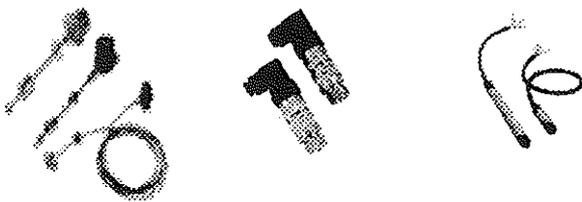
<http://www.environment.sa.gov.au/biodiversity/pub.html>



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News From Across The Ditch

Below is a selection of news items from New Zealand. I haven't heard much from our friends over there lately. Are you still there guys?

Deluge seven times capacity of storm water system

09 FEBRUARY 2002

By BLAIR MAYSTON

The torrential rain which pounded Dunedin on January 17 fell up to seven times faster than the city's storm water system could handle, a Dunedin hydrologist says.

Rain effects hydrologist Dave Stewart said yesterday he obtained rainfall figures for the storm which showed the rate of rainfall was "exceptional".

Mr Stewart said in the first minute, 1mm of rain fell, twice the 0.5mm a minute the storm water system can cope with.

In the second minute the rainfall increased to 3.5mm - seven times the system capacity - and 3mm fell in the third and fourth minutes.

"These are absolutely exceptional rainfall rates . . . that's why everything was overwhelmed almost immediately," Mr Stewart said.

The deluge hit about 5.45pm and, within minutes, flooded stores in the central city and triggered rock falls on Otago Peninsula.

People reported seeing fountains of water 30cm high pushing through manhole covers in some parts of town during the storm.

Mr Stewart said any storm water system that could cope with such a fall would be prohibitively expensive to build.

The readings were taken on the roof of the Civic Centre building.

Mr Stewart said areas in the storm's path received about 15mm of rain.

Don't go near the water if it's been raining

01 FEBRUARY 2002

By SUE FOX

Aucklanders are reminded not to swim at east and bays beaches for 24 hours after heavy rain.

Auckland City Council's senior environmental planner Peter Rawson says the advice is given because of the possibility of high bacteria counts due to sewer and stormwater overflowing into the bays.

The seawater at Judges Bay, Okahu Bay, Mission Bay, Kohimarama, St Heliers and Pt England is sampled only once a week - every Wednesday until April 17.

Despite a wet December and plenty of rain this month, no beaches have closed this summer.

Mr Rawson says he's unsure why there have been no high bacteria readings after the heavy downpours.

The council, with North Shore City and Rodney District Council, use a helicopter to take water samples a short distance from the councils' beaches between noon and 2pm each Wednesday.

The seawater is tested by Metrowater for enterococci, a naturally occurring bacteria found in the intestinal tracts of warm-blooded animals, the preferred indicator of the "health" of the marine environment.

Any water that doesn't pass the test is resampled by hand.

If the second sample also fails warning signs are put up closing the beach, says Mr Rawson.

(The same problems seem to crop up everywhere! Ed.)

Water for Survival

Water for Survival supports improvements in hygiene and water supply at village level in the third world by operating through non-government agencies. Water for Survival is a New Zealand based charitable trust which operates on minimal overheads (less than 2% of income) by using volunteer organisers. It has a close association with the British charity Water Aid and often operates through them.

Operating since 1988, in its first 10 years Water for Survival raised over NZ\$ 1M for its purpose, supporting projects in India, Bangladesh, Sierra Leone, Ghana, Tanzania, Solomon Islands, Vietnam, Ethiopia and Kenya, serving 260,000 people.

Water for Survival activities include fund raising events and talks by visitors with experience of third world aid projects.

Watering the Plains

18 February 2002

From Independent Newspapers Ltd.

For more than a century Canterbury farming communities have dreamed of harnessing the irrigation potential of the Waimakariri and Rakaia rivers. Now the dream is closer to being fulfilled, says The Press in an editorial.

The latest proposal is certainly ambitious. At a cost of \$235 million, the Central Plains Water scheme could provide irrigation for about 300 farms, or 84,000ha of farmland. If constructed, this would substantially boost the productivity of the land it services. From that, the whole province would benefit.

At its simplest, the scheme would entail tapping the Rakaia and Waimakariri rivers at peak flow periods in winter and spring. The water would be stored, then used for irrigation during the drought-prone summers.

New Zealand is vulnerable to drought, as the big dry of 1997-98 showed. It is estimated to have had a \$1 billion farm-gate cost and impacted on the over-all performance of the economy, slowing it significantly well into 1999. Last year's drought was less severe than its predecessor but was costing the country about \$2.5 million a day in lost production.

In Canterbury, the existing irrigation schemes were unable to cope. They cover almost 400,000 hectares of farmland, but by last year's autumn their feeder rivers were running so low that draw-off restrictions were in force. Some schemes had stopped operating entirely. About half the area of pasture normally sustained by irrigation went dry.

Position Vacant

NT Department of Infrastructure Planning & Environment

I've been waiting to get the advertisement from NT Department of Corporate & Information Services, but now I can't wait any longer!!! This is the best I can do.

If you want more information, contact:

Simon Cruickshank,

Snr Hydrographer, Dept Infrastructure Planning & Environment

Ph 08-89993676 Fax 08-89993666

e-mail Simon.Cruickshank@nt.gov.au

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